

CUSTOMER NO.: 24498
Serial No.: 09/808,463
Reply to Final Action of: 01/03/05
Date of Response: 01/26/05

PATENT
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LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 – 13 are pending in this application. Claims 1-9, 11, and 12 have been previously indicated as being allowable. Claim 10 is presently rejected. No claim amendments are made to claims 1-12 in this response. Claim 13 has been added. Reconsideration as to the allowability of claim 10 is respectfully requested.

1. (Previously Presented) Process for coding video images according to a non object-based coding standard, said process comprising:
 - a step of extraction (1) of at least one video object from an image originating from a sequence of images, by the construction of a segmentation key defining the contours of the object in the image,
 - a step of coding (2) the video object according to said standard so as to form an elementary stream (ES),
 - a step of coding (3) the segmentation key relating to the video object, according to said standard, so as to form an elementary stream,
 - a step of coding (5) a background image into which the object is to be inserted, according to said standard, so as to form an elementary stream,
 - a step of multiplexing (4, 6, 7) the elementary streams relating to one or more objects and to the background image so as to provide a programme stream (PS) or transport stream (TS) according to said standard.

2. (Previously Presented) Process according to Claim 1, said process comprising an additional step of calculating a depth map defining the relative positioning of the video objects in terms of depth, wherein said depth map is coded according to said standard so as to provide an elementary stream multiplexed with the other elementary streams so as to be transmitted in the data transport stream.

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3. (Original) Process according to Claim 2, wherein said depth map is obtained from information originating from a camera providing video images to be coded.

4. (Original) Process according to Claim 1, wherein said coding of the video object is performed by coding the complete image, using only the DC coefficients for the coding of parts of the image other than the object.

5. (Original) Process according to Claim 1, wherein said coding of the video object is performed by coding the complete image, the coding mode for coding the background of the complete image being forced in such a way as to reduce the number of coding bits.

6. (Original) Process according to Claim 5, wherein, in the case of a uniform background, said coding mode for coding the background uses only the DC coefficients.

7. (Previously Presented) Process according to Claim 5, wherein macroblocks relating to the background of the image are detected on the basis of the segmentation key and wherein the "skipped macroblocks" mode of the MPEG 2 standard referenced ISO/IEC 13818-2:1996(E) is forced for the coding of the temporally stationary macroblocks.

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8. (Previously Presented) Process according to Claim 5, wherein macroblocks relating to the background of the image are detected on the basis of the segmentation key and wherein the predictive modes of the MPEG 2 standard referenced ISO/IEC 13818-2:1996(E) are used for the coding of the temporally mobile macroblocks, by forcing the motion vectors to the same value and the prediction residual to zero.

9. (Previously Presented) Coding device for implementing the process according to Claim 1, said device comprising an object extraction circuit (1) for providing a segmentation key defining the borders of the object, a non object-based circuit for coding (3) of the texture of the video object, a non object-based circuit for coding of the segmentation key (2), a circuit for MPEG coding of a background image (5) so as to provide elementary streams, at least one circuit (4, 6, 7) for multiplexing the elementary streams so as to provide a programme stream (PS) or transport stream (TS).

10. (Previously Presented) Program stream (PS) or transport stream (TS) according to a non object-based coding standard, such stream comprising an elementary stream (ES) for the coding of a video object, an elementary stream for the coding of a background image, an elementary stream for the coding of a segmentation key defining this video object.

11. (Previously Presented) The process according to claim 4, wherein said step of coding the complete image comprises an image being split into blocks and blocks being coded using a Discrete Cosine Transformation giving DC and AC coefficients.

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12. (Previously Presented) The process according to claim 5, wherein said step of coding the complete image comprises an image being split into blocks and blocks being coded using a Discrete Cosine Transformation giving DC and AC coefficients.

13. (New) Apparatus for coding video images according to a non object-based coding standard, said apparatus comprising:

- means for extraction of at least one video object from an image originating from a sequence of images, by the construction of a segmentation key defining the contours of the object in the image,
- means for coding the video object according to said standard so as to form an elementary stream (ES),
- means for coding the segmentation key relating to the video object, according to said standard, so as to form an elementary stream,
- means for coding a background image into which the object is to be inserted, according to said standard, so as to form an elementary stream,
- means for combining the elementary streams relating to one or more objects and to the background image so as to provide a programme stream (PS) or transport stream (TS) according to said standard.